

# Response to the Welsh Government's consultation on achieving a low-carbon pathway for Wales to 2030

## 4 October 2018

### About Energy UK

Energy UK is the trade association for the GB energy industry with a membership of over 100 suppliers, generators, and stakeholders with a business interest in the production and supply of electricity and gas for domestic and business consumers. Our membership covers over 90% of both UK power generation and the energy supply market for UK homes. We represent the diverse nature of the UK's energy industry – from established FTSE 100 companies right through to new, growing suppliers and generators, which now make up over half of our membership.

Our members turn renewable energy sources as well as nuclear, gas and coal into electricity for over 27 million homes and every business in Britain. Over 730,000 people in every corner of the country rely on the sector for their jobs, with many of our members providing long-term employment as well as quality apprenticeships and training for those starting their careers. Around 7,000 people are directly employed in the energy sector in Wales, with many more jobs supported indirectly. The energy industry invests £12bn annually, delivers £88bn in economic activity through its supply chain and interaction with other sectors, and pays £6bn in tax to HM Treasury.

We welcome the opportunity to respond to the Welsh Government's consultation on a low carbon pathway for Wales. Our responses to selected questions are set out below.

### Response to Consultation Questions

#### **Q3. Overall, to what extent do you agree with the potential actions for reducing emissions set out in this document?**

There are many actions which Energy UK consider to be 'no regrets' and therefore should be taken forward. For example, we support the proposals for developing local and regional planning; innovation and commercialisation of new products and services; acceleration of renewables deployment; commission research on Carbon Capture Use and Storage (CCUS), and establish an industry-led working group on decarbonisation.

However, the power sector is concerned that if the moratorium on gas-fired power stations suggested in the consultation were applied either retrospectively or on new plant, it could actually lead to an overall increase in CO<sub>2</sub> emissions if the lost electrical output were replaced by running more carbon-intensive plant elsewhere in the GB electricity market. The jobs at the

plant subject to the moratorium and economic activity associated with the local supply chains could also be lost from Wales.

A moratorium on gas plant in Wales would not contribute to the reduction of total UK CO<sub>2</sub> emissions, but would simply push those emissions, and the onus to reduce them, onto the rest of the UK. When considering such action, it is important for Welsh Government to be mindful of the principles behind the seven well-being goals, particularly “a globally responsible Wales”, as set out in Wales’ legally-binding Well-being of Future Generations Act 2015.

In addition, it is clearly not in the interests of the people of Wales for the Welsh Government to be encouraging the unnecessary loss of well paid, highly-skilled jobs in Wales. This offshoring of jobs will not lead to a material decrease in overall CO<sub>2</sub> emissions.

The Committee on Climate Change’s (CCC) analysis shows that it is possible to sustain an environmentally and socially responsible power sector in Wales. The CCC scenarios demonstrate that the power sector can comfortably co-exist with other industrial sectors, such as the iron and steel industry.

The GB electricity system relies on dispatchable plant to enable the growth of renewables without compromising security of electricity supply. A moratorium could prevent the newest, most efficient, lowest carbon (and lower NO<sub>x</sub> – air quality is also a consideration) gas-fired plant being developed in Wales with less desirable plant taking its place elsewhere.

**Q4. Please tell us if you have any ideas for how we should deliver the potential actions for reducing emissions.**

Here we focus on the proposed actions mentioned in the consultation and / or listed in Annex B that are most relevant to our members in the energy sector.

Actions or areas where we think the Welsh Government can most affect change, which we consider should be taken forward as a priority are:

- a) *Support the development of regional and local energy planning to address the supply, distribution, and use of energy*

Regional and local energy planning is crucial for energy insofar as it is currently the relevant authority for approval of new generation projects under 50MW, and onshore wind projects of any size. From April 2019, the Welsh Government will be the relevant authority for approvals of any electricity generation projects under 350MW. It will be important for there to be sufficient resource and guidance for planning officials, in light of this new responsibility.

- b) *Support innovation and commercialisation of new products, processes and services in the energy system*

Energy UK supports innovation in new technologies aligned with decarbonisation, covering generation, new flexibility products including energy storage, CHP, and energy services that fit with a low carbon future, including renewables and nuclear. Many members would welcome collaboration and partnership with the Welsh Government to deliver these new technologies.

One possibility, inferred in the graphic on page 27 of the consultation, is the use of hydrogen as an alternative fuel to natural gas, or the use of CCUS. These technologies require Research & Development (R&D) funding before they can be deployed commercially. A cross-industry group on decarbonisation would add strength and credibility to Wales as a potential CCUS or hydrogen 'cluster' (see below).

*c) Accelerate the deployment of renewable generation whilst encouraging local ownership*

Some of our members are actively involved in the deployment of renewables in Wales and elsewhere. Despite the Welsh Government not having fully devolved powers on generation consents, its executive competence for onshore wind sites and responsibility for projects under 50MW in size gives it the authority to play a critical role in the energy transition, enabling distributed and renewable generation.

In 2016, Wales generated 38.8 Terawatts per hour (TWh) of electricity of which 6.9TWh was from renewables with the rest sourced from six Combined Cycle Gas Turbines and a coal plant<sup>1</sup>. From 2011 to 2016 renewable generation more than doubled with subsequent further growth expected. Wales has a unique geography which predisposes it to a number of forms of low carbon generation, a low population density enabling it to export much of the electricity it generates (18.4TWh)<sup>2</sup> and a skilled domestic workforce resulting from decades of investment in energy infrastructure.

Anglesey has some of the first pioneering nuclear plants, and could become home to the next generation of developments. Additionally, Welsh terrestrial and coastal wind-speeds have enabled the deployment of significant onshore and offshore wind plants. Wales' mountainous interior has enabled it to benefit from the construction of nationally critical pumped storage facilities. More broadly, Wales has developed highly flexible generating and storage facilities, critical to the ongoing deployment of inflexible and intermittent low carbon generation.

The UK Government's decision not to support the Swansea Tidal Lagoon project was largely based around costs. It is obviously important to bear in mind costs to the consumer; however, we consider a diverse power portfolio to best suit the UK, Wales and the ambition to deliver a low carbon energy future for all. The fall in the cost of offshore wind illustrates what can happen when industry and Government work together to reduce costs and we hope that tidal power can be revisited in the future.

Different technology types are allocated to a number of Pots under the Contracts for Difference (CfD); established technologies including onshore wind and solar power are included in Pot 1.

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<sup>1</sup> Energy Generation in Wales 2016 (2017), Regen – available [here](#).

<sup>2</sup> Energy Trends: December 2017 (2017), BEIS – available [here](#).

However, since the first auction in 2015 the UK Government has not held any auctions for Pot 1 technologies, effectively denying them a route-to-market despite these substantial cost reductions.

As part of the UK Government's review of the Electricity Market Reform (EMR) package which is due to complete in summer 2019, Energy UK has called for BEIS to change its position to allow Pot 1 technologies under the CfD a route-to-market and then allow the robust local planning rules to determine whether local communities want to bring forward developments. Wales's unique geography makes it a prime location for the technologies deployed through Pot 1; without a route-to-market these technologies are unlikely to come forward which means the Welsh local economy loses out on potential benefits from future renewable energy generation.

Energy UK supports the continuation of the CfD framework so as to provide the stable investment climate that developers and the supply chain need. This continuation will give developers in Wales the certainty they need to bring forward renewable energy schemes/projects.

As demonstrated by a 2018 report from consultants BVG Associates (BVGA), a commitment to five new CfD auctions between 2019 and 2025 would encourage 5GW of new onshore wind capacity of which 12% would be built in Wales. The "Power of Onshore Wind"<sup>3</sup> report indicated that this would also generate approximately 18,000 skilled jobs during peak-construction years including 8,500 long-term skilled jobs during operation phases, of which 17% would be created in Wales. Whilst the UK Government has recently committed to regular CfD allocation rounds through to the mid-2020s, it is unclear whether least cost renewables – including onshore wind – will be eligible to participate.

*d) Commission an independent economic and technical feasibility study on carbon capture use and storage (CCUS)*

As the Committee on Climate Change (CCC) looks at targets beyond 80% by 2050 to meet the increased ambition required under the Paris Agreement, further thinking about the role CCUS (and other "yet to be developed" technologies) could play across all sectors to meet a net zero target is required. In this context it is anticipated that the UK will be required to meet net zero emissions, or close to net zero, by 2050. CCUS and bioenergy with carbon capture usage and storage (BECCUS) could be vital in helping achieve either the current or any more ambitious target.

If CCUS becomes cost-effective in the near future, it could provide a source of firm and flexible generation alongside nuclear and renewables as the reliance on unabated gas-fired generation is reduced. A cost-effective mix of low carbon generation technologies will be required in parallel with improvements in energy efficiency. The extent of CCUS's role will

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<sup>3</sup> 'The Power of Onshore Wind', June 2018, available - <https://bvgassociates.com/download/6985/>

depend on how competitive it is against other low carbon generation technologies in terms of impact on whole system costs.

There are also promising opportunities for the deployment of CCUS in sectors where there are few alternatives for decarbonisation, such as certain industrial processes. The CCC has concluded that deploying CCUS is the most cost-effective pathway to decarbonisation in these difficult-to-reach sectors. Negative emissions from BECCUS in electricity generation could be particularly advantageous to offset emissions in other sectors that are more difficult or expensive to decarbonise.

Broader industrial strategy benefits should also be considered. The development of CCUS in Wales could also stimulate growth in the Welsh supply chain in terms of manufactured goods and services. A strengthened industrial base could in turn create significant export potential in a growing market. In 2012 the worldwide utilisation of CO<sub>2</sub> was 114 MtCO<sub>2</sub> per year, primarily for chemical and polymer manufacture. This has the potential to be rapidly increased to a range of 2000 – 2200 MtCO<sub>2</sub> per year particularly when the manufacture of synthetic fuels using CO<sub>2</sub> is considered.

*e) Establish an industry-led working group on decarbonisation*

As noted in the consultation, there is no dedicated group to address the issue of decarbonising Welsh industry. This is a missed opportunity, as there are possible synergies between sectors – for example, scope for sharing infrastructure costs associated with CCUS and hydrogen, and developing South Wales into an ‘industrial cluster’. CCUS is vital if industry is to effectively decarbonise. It would also enable further reductions in emissions from power generation (e.g. CCUS or using hydrogen as an alternative to natural gas).

*f) Develop a charging network that encourages early take-up of electric vehicles (EVs) and explore the merits of other measures, including access to bus lanes and free municipal parking*

Energy UK supports the Welsh Government’s intention to develop a charging network and encourages its intention to duly consider the role that different types of charging play in the charging ecosystem (e.g. at home, at work, public destination and public en-route/rapid charging), whilst recognising the importance of also encouraging EV uptake, as the two are complementary.

Energy UK suggests the Welsh Government should seek to use strategic investment and targeted policy intervention to seed the development of a comprehensive charging network, largely funded by the private sector.

Energy UK recommends considering targeted investments in grid reinforcements for strategic en route rapid charging hubs, consideration of supplementary grants for workplace charging infrastructure, given the relative shortage of off-street home parking in Welsh towns, and a review of planning requirements, ensuring the inclusion of passive and active charge point

provision in new developments, with a view to ensuring suitable provision for likely EV uptake towards 2030.

In addition, Energy UK recommends the Welsh Government reviews charging infrastructure provision within the car parks of the property it owns, from council premises, public car parks and major transport hubs, again targeting EV uptake levels towards 2030.

Finally, in line with recent voluntary commitments from the private sector<sup>4</sup> and from the UK Government<sup>5</sup>, Energy UK urges the Welsh Government to lead by example by committing to replace its fleet of vehicles with EVs.

*g) Scope out the challenges and opportunities around low-carbon heat*

Energy UK has long called for the UK Government to set energy efficiency as a national infrastructure priority and welcomes the Welsh Government's intention to develop a long-term, evidence-based residential retrofit programme. As outlined in our recent position paper on the decarbonisation of heat<sup>6</sup>, funding and incentives offer an attractive option for encouraging change across industry and consumers and we believe that providing long-term certainty on incentive levels will be vital as we transition to low carbon heat.

However, we would also highlight that funding and incentives schemes will always result in a level of uncertainty in the duration of central funding, given changing government priorities and unforeseen economic constraints. As such, the implementation of a timeframe for regulatory changes and increasing standards, particularly for new build and major renovation projects, would complement any support scheme and give greater certainty to investors, and potentially result in change at a greater scale. Energy UK welcomes the Welsh Government's plan to set higher energy efficiency standards for new buildings. Energy UK supports the reintroduction of zero-carbon or net-zero-carbon housing policies as part of a national energy efficiency programme and believes that they should be integrated with changes to building standards requiring low carbon heating and a regulatory framework for district heating. Energy UK recommends that these measures be taken forward as part of the Welsh Government's review of Part L of Building Regulations.

Further, as recognised in the consultation document, scoping out the challenges and opportunities around low carbon heat is a vital part of decarbonising heat. For the Welsh Government to make decisions on the future of heat in the 2020s, more trials at scale are needed to identify their impact on local energy networks and understand local differentiation. The Clean Growth Strategy allocated a low amount of resource for the decarbonisation of heat; Energy UK therefore recommends that the Welsh Government build on the existing work underway across Wales by supporting large scale demonstrator trials. These trials must

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<sup>4</sup> <https://www.cleanairday.org.uk/clean-van-commitment>

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[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/739460/road-to-zero.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf)

<sup>6</sup> <https://www.energy-uk.org.uk/publication.html?task=file.download&id=6609>

include aspects of energy efficiency measures, low carbon gas and a range of alternative heating assets if they are to be representative of the likely future heat mix in Wales.

Finally, Energy UK recommends that the Welsh Government proceeds with areas of no / low regret by deploying low carbon heat solutions and making energy efficiency improvements in, for example, off gas grid properties, comprising around 21 per cent of Welsh properties<sup>7</sup>.

Actions or proposals that we do not agree should be taken forward include:

- a) *Develop and implement Wales's policy position around the extraction and combustion of fossil fuels in power generation – specifically a 'moratorium on gas fired power stations' (p. 34).*

We do not consider that any sort of moratorium on gas-fired power stations would help to deliver either the Welsh Government's or the UK's carbon reduction ambitions, and may even be counter-productive.

### **Carbon Leakage**

As noted in the consultation document, the UK's carbon budgets are measured on a 'net' basis, allowing for trading of CO<sub>2</sub> emissions allowances (EUAs) through the EU Emissions Trading System (EU ETS). However, the Welsh Government has decided to count Welsh territorial emissions on a gross basis whilst simultaneously recognising that the Welsh Government is not responsible for policy in areas covered by the traded emissions sector.

The UK already has very effective policy levers for reducing emissions from power generation, namely the EU ETS and the UK Carbon Price Support (CPS) mechanism, which together have initiated a dramatic reduction in electricity generated from coal – in 2017 coal generation represented less than 7% of UK domestic electricity production. It is worth noting that the cost of EUAs has doubled in recent months, currently standing at roughly €20/tCO<sub>2</sub>, on top of the CPS of £18/tCO<sub>2</sub>. These policies will soon be supplemented by legislation that will ensure closure of all unabated coal generation by the end of 2025.

Once coal has exited the market, emissions reduction in the power sector will be driven by the growth of low carbon technologies such as onshore and offshore wind, from which Wales is very well-placed to benefit given its geography and natural resources. Any artificial local constraints on gas-fired generation in Wales, such as a moratorium, will not reduce the need for gas-fired generation at a UK level nor will it encourage the growth of renewables, which is driven by UK Government support, it will simply push generation elsewhere within the GB electricity market and reduce infrastructure investment in Wales.

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<sup>7</sup> <https://www.theccc.org.uk/wp-content/uploads/2017/12/CCC-Building-a-low-carbon-economy-in-Wales-Setting-Welsh-climate-targets.pdf>

## Jobs Leakage

Around 7,000 people are directly employed in the energy sector in Wales, with many more jobs supported indirectly.

Many of these jobs will be people who are involved in the construction, operation and maintenance of power plants. A moratorium will mean that such jobs at gas-fired power stations would be lost.

A case study can help illustrate the value of gas-fired power stations in Wales. Research by the University of Cardiff<sup>8</sup> has calculated that Pembroke gas-fired CCGT (built in 2012) contributes approximately £20m per year to the local economy, both directly, through salaries and rates, and indirectly through spending on subcontractors and suppliers. Any artificial constraints on generation that lead to exporting of carbon emissions will also jeopardise those jobs and their associated economic benefits. In short, carbon leakage will result in jobs leakage.

## Undermining investor confidence

Looking forward, all credible forecasts, (e.g. BEIS, National Grid, CCC) show that considerable amounts of investment in firm, flexible electricity generating capacity is going to be needed to back-up the growth of low carbon generation required to meet our future carbon budgets. These projects tend to be smaller in scale than the large power stations that have traditionally provided bulk generation of electricity, and consequently the emissions from these so-called peaking plants will be minimal as they will only run when they are needed (usually significantly less than 500 hours per year). However, these plant will be crucial in delivering the necessary security of energy supply demanded by both Wales and the UK during periods when wind and solar generation are insufficient. Investors in these projects, regardless of the scale, need to be comfortable with the regulatory and policy risks they face, otherwise those investments will not be made.

Changes to the regulatory regime for developing, constructing and operating power stations of any scale increase the risks that owners of, and investors in, such sites face. Any increase in these regulatory risks, such as the suggested moratorium, would undermine the ability of those who wish to invest in Wales. This erosion of investor confidence will reduce inward investment in the energy sector, and possibly even other sectors, since the economic research into Pembroke power station has shown that the economic benefits are shared across other sectors such as manufacturing, construction, hospitality and catering.

Consequently, a moratorium on gas-fired power stations in Wales – whether applied to new, or existing installations – will simply mean that Wales will lose out on the opportunity for

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<sup>8</sup> 'The economic impact of Pembroke Power Station', July 2015, available: <https://www.group.rwe/-/media/RWE/documents/03-unser-portfolio-und-loesungen/betriebsstandorte/eis-pembroke-power-station-reduced-to-10-and-under.pdf>

investment in new firm, flexible capacity, along with the associated jobs, local taxes and economic value in the energy sector and those sectors dependent upon it.

### **Global responsibility**

Given Wales is home to some of the newest and most efficient CCGTs in the UK, pushing gas-fired generation out of Wales could allow less efficient CCGTs to increase their operations, perversely leading to an increase in overall UK CO<sub>2</sub> emissions and worsening the burden of emissions reduction for the other UK nations. When considering such action, it is important for Welsh Government to be mindful of the principles behind the seven well-being goals, particularly “a globally responsible Wales”, as set out in Wales’ legally-binding Well-being of Future Generations Act 2015.

### **Q6. Considering the opportunities and challenges in each sector, what are your views on whether action should be prioritised in some sectors over others? What further action, if any, should Government take to tackle emissions from medium combustion plants and generators?**

Comprehensive action to decarbonise the power sector has already been taken over the past two decades, resulting in the growth of renewables, the development of new nuclear build options and most recently the UK Government’s policy to cease all unabated coal generation by the end of 2025. Emissions from the power sector are now dwarfed by those from heating and transport. Consequently, the focus for future decarbonisation policies, both in Westminster and Cardiff, should be on reducing emissions from transport and heat, whilst ensuring that industry gets the security of electricity supply that it needs. The dependency of the economy on electricity will increase with the roll-out of EVs and heat decarbonisation, so security of electricity supply becomes ever more important.

With regards to transport, the automotive industry is being proactive in bringing low carbon solutions to market in response both to government’s push for change and consumer demand for low emission vehicles. The Welsh Government should prioritise the actions set out in the consultation in order to facilitate the roll-out of EVs within Wales.

However, unlike low carbon transport, there is little evidence of “consumer pull” for low carbon heat solutions for either buildings or industrial processes. As a consequence, policy makers need to take a leading role in order to seed the demand for low carbon heating solutions and energy efficiency measures.

Regarding medium combustion plants, the environmental protection requirements of the Medium Combustion Plant Directive (MCPD) and additional requirements for “specified generators” with a capacity below 50 MWth have only recently (early 2018) been brought forward in regulations. We consider that the regulations will have a positive impact on reducing emissions from the medium combustion segment of industry but, as there are thousands of plant in scope, it will take time to implement the new regulatory regime. Therefore, we would not support the introduction of any further controls at this time. However, it is vital that appropriate monitoring processes are maintained to provide a guarantee that those plants

which are required to fit abatement technology have done so and subsequently comply with the given Emission Limit Values. The Welsh Government must therefore ensure that the Environmental Regulator is sufficiently resourced to introduce and enforce the new regulations.

The MCPD and specified generator controls are aimed primarily at the reduction of NO<sub>x</sub> emissions. Many smaller fossil-fuelled electricity generating plants currently fall outside the scope of the EU ETS and therefore are not obliged to pay the full market price for their CO<sub>2</sub> emissions. Given the recent increase in the number of such installations providing balancing services to the electricity grid, the Welsh Government may wish to consider, in conjunction with Westminster and the other Devolved Administrations, whether it would be proportionate to seek to bring them into the Greenhouse Gas Permitting regime at some point in the future so that their contribution to emissions can be recognised.

**Q7. How could we encourage more collaboration and innovation between sectors?**

Please see our response to Q4 above – set up a cross-sector, industry-led group; and provide support and funding for R&D on solutions that support synergies and decarbonisation across sectors, such as a South Wales Industrial Cluster.

**Q8. How do you think the potential actions to reduce emissions might affect you or the organisation you work for?**

Energy UK is a trade organisation and therefore this question is not directly applicable. However, please see our responses to Q3 and Q4 regarding our members' concerns about a moratorium on gas-fired power stations.

**Q9. How do you think the potential actions to reduce emissions might affect the following?**

Public health: Strong action on decarbonisation of transport would reduce not only carbon emissions but also emissions of oxides of nitrogen, contributing to improvements in ambient air quality.

**Q10. How do you think the potential actions to reduce emissions might contribute to achieving the national well-being goals? You can read descriptions of the goals at <https://futuregenerations.wales/about-us/future-generations-act>.**

See response to Q4 regarding our members concerns on a moratorium on gas fired power stations. As there is a material risk of carbon leakage as a result of a moratorium, Welsh Government should be mindful of the principles behind the seven well-being goals, particularly “a globally responsible Wales”, as set out in Wales’ legally-binding Well-being of Future Generations Act 2015.

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